

Attorney Docket No. 356-014-USP

Amendments to the Specification:

Please replace the paragraph of the application beginning at page 7, line 14 and ending at page 8, line 14 of the originally-filed specification with the following paragraph.

The application of sufficiently high-shear may be effectuated by application of a high pressure. The high pressure may be applied as a high pressure gas. The gas may comprise oxygen. The pressure may be greater than or equal to about 60 PSI. The gas may be applied at a dew point of about -40 degrees F 12 ppm. The process may further include a step of compacting the dry material. In the process, the step of compacting may be performed after one pass through a compacting apparatus. The compacting apparatus may be a roll-mill. In one embodiment, after the one pass though the compacting apparatus the dry material comprises a self supporting dry film. The self supporting dry film may comprise a thickness of about 100 to 250 microns. The self supporting dry film may be formed as a continuous sheet. The sheet may be one meter long. The dry material may be manufactured without the substantial use of any processing additives. The processing additives not used may be hydrocarbons, high boiling point solvents, antifoaming agents, surfactants, dispersion aids, water, pyrrolidone mineral spirits, ketones, naphtha, acetates, alcohols, glycols, toluene, xylene, and ~~Isoparaffin~~[™] Isoparaffin fluids. The process may include a step of calendering the dry material onto a substrate. The substrate may comprise a collector. The collector may comprise an aluminum foil. The dry material may calendered directly onto the substrate without use of an intermediate layer. The dry material may be calendered onto a treated substrate. The dry binder may comprise a fibrillizable fluoropolymer. In one embodiment, the dry material consists of the dry carbon particles and the dry binder. The dry material may comprise between about 50% to 99% activated carbon. The dry material may comprise between about 0% to 25% conductive carbon. The dry material may comprise between about 0.5% to 20% fluoropolymer particles. The dry material may comprise between about 80% to 95% activated carbon and between about 0% to 15% conductive carbon, and the dry binder may comprise between about 3% to 15% fluoropolymer.

Please replace the paragraph of the application beginning at page 8, line 15 and ending at page 8, line 21 of the originally-filed specification with the following paragraph.

In one embodiment, a method of manufacturing an electrode film may comprise the steps of mixing dry carbon and dry binder particles; and forming a self-supporting film from the dry particles without the use of any processing additives such as hydrocarbons, high boiling point solvents, antifoaming agents, surfactants, dispersion aids, water, pyrrolidone

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mineral spirits, ketones, naphtha, acetates, alcohols, glycols, toluene, xylene, and Isoparaffinic fluids.

Please replace the paragraph of the application beginning at page 8, line 22 and ending at page 9, line 3 of the originally-filed specification with the following paragraph.

In one embodiment, an energy storage device product may comprise a self-supporting film comprising a dry mix of dry carbon and dry binder particles. The dry mix may be a dry fibrillized mix. The dry mix may comprise substantially no processing additives. The processing additives not used may be hydrocarbons, high boiling point solvents, antifoaming agents, surfactants, dispersion aids, water, pyrrolidone mineral spirits, ketones, naphtha, acetates, alcohols, glycols, toluene, xylene, and Isoparaffinic fluids. The dry mix may be dry fibrillized by application of a high pressure. The high pressure may be applied by a high pressure gas. The high pressure may be applied by air with a dew point of about -20 degrees F 12 ppm.

Please replace the paragraph of the application beginning at page 9, line 4 and ending at page 9, line 27 of the originally-filed specification with the following paragraph.

In one embodiment an energy storage device product, comprises one or more self-supporting dry film comprising a dry fibrillized mix of dry binder and dry carbon particles. The self supporting dry film may be compacted. The dry film may comprise a thickness of 100 to 250 microns. The self supporting dry film may comprise a length of at least 1 meter. The self supporting dry film may be positioned against a substrate. The mix may comprise between about 50% to 99% activated carbon. The mix may comprise between about 0% to 25% conductive carbon. The mix may comprise between about 0.5% to 20% fluoropolymer particles. The mix may comprise between about 80% to 95% activated carbon and between about 0% to 15% conductive carbon, and the dry binder may comprise between about 3% to 15% fluoropolymer. The self supporting film may comprise no processing additives. The processing additives not used may be hydrocarbons, high boiling point solvents, antifoaming agents, surfactants, dispersion aids, water, pyrrolidone mineral spirits, ketones, naphtha, acetates, alcohols, glycols, toluene, xylene, and Isoparaffinic fluids. The substrate may comprise a collector. The collector may comprise aluminum. The product may comprise a collector, wherein the dry film is positioned directly against a surface of the collector. The dry mix may be dry fibrillized by a high-pressure gas. The collector may comprise two sides, wherein one self-supporting dry film is calendered directly against one side of the collector.

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and wherein a second self-supporting dry film is calendered directly against a second side of the collector. The collector may be treated. The collector may be formed to comprise a roll.

Please replace the paragraph of the application beginning at page 10, line 4 and ending at page 10, line 9 of the originally-filed specification with the following paragraph.

In one embodiment, an energy storage product may consist of a dry fibrillized mix of dry binder and dry carbon particles formed into a continuous self supporting electrode film without the use of any processing additives such as high boiling point solvents, antifoaming agents, surfactants, dispersion aids, water, pyrrolidone mineral spirits, ketones, naphtha, acetates, alcohols, glycols, toluene, xylene, and —leepore™ isoparaffinic fluids.

Please replace the paragraph of the application beginning at page 10, line 4 and ending at page 10, line 9 of the originally-filed specification with the following paragraph.

In one embodiment, a solventless method for manufacture of an energy storage device electrode comprises the steps of providing dry carbon particles; providing dry binder particles; and forming the dry carbon and dry binder particles into an energy storage device electrode without the substantial use of any hydrocarbons, high boiling point solvents, antifoaming agents, surfactants, dispersion aids, water, pyrrolidone mineral spirits, ketones, naphtha, acetates, alcohols, glycols, toluene, xylene, and/or leepore™ isoparaffinic fluids. In one embodiment, an energy storage device electrode comprises substantial no hydrocarbons, high boiling point solvents, antifoaming agents, surfactants, dispersion aids, water, pyrrolidone mineral spirits, ketones, naphtha, acetates, alcohols, glycols, toluene, xylene, and/or leepore™ isoparaffinic fluids.